REMARKS

In the Action, claims 1-4, 8, 11, 12 and 15 are rejected, and claims 7, 9, 10, 13 and 14 are objected to as depending from a rejected base claim, but indicated as being allowable if rewritten in independent form.

In response, claim 1 is amended to recite that the shell contains organic polymer fine particles as in original claims 2 and 3. Claims 2 and 3 are cancelled. Claim 7 is amended to include the subject matter of original claim 4 and claim 1. Accordingly, claim 7 is submitted to be in condition for allowance.

Claim 8 is amended to include the subject matter of allowable claim 9, and claim 12 is amended to include the subject matter of allowable claim 13. Claims 10 and 14 are amended to depend from claims 8 and 12, respectively. Accordingly, claims 8, 10, 11, 12, 14 and 15 are submitted to be in condition for allowance.

The pending claims in this application are claims 1, 4, 7, 8, 10-12, 14 and 15, with claims 1, 7, 8 and 12 being independent. In view of these amendments and the following comments, reconsideration and allowance are requested.

The specification is amended on page 6, line 19, to correct the clerical error noted in the Action. Accordingly, the specification is submitted to be in proper form.

Rejections Under 35 U.S.C. § 102(b)

Claims 1, 2, 4, 8, 11 and 12 are rejected under 35 U.S.C. § 102(b) as being anticipated by one or more of U.S. Patent No. 5,500,223 to Behan et al., U.S. Patent No. 6,537,583 to Dupuis et al., U.S. Patent No. 5,804,298 to Moy or U.S. Patent No. 6,149,953 to Redding, Jr.

Independent claim 1 is amended to include the subject matter of original claim 3, which is not rejected over the cited patents. Independent claim 8 is amended to include the

subject matter of original claim 9 which is also not rejected over the cited patents. Accordingly, the amendments to claims 1 and 8 are submitted to overcome these rejections. Applicants respectfully request the rejections under 35 U.S.C. § 102(b) be withdrawn.

Rejection Under 35 U.S.C. § 103(a)

Claims 1-4 are rejected under 35 U.S.C. § 103(a) as being obvious over U.S. Patent No. 6,780,507 to Toreki et al. Toreki et al. is cited for disclosing microcapsules containing a liquid component surrounded by a polymeric shell.

The claims are allowable over the art of record since Toreki et al. does not disclose or suggest a microcapsule having a shell containing organic polymer fine particles with a particle diameter of not larger than 1 μm. As noted in the Action, Toreki et al. does not disclose or suggest the claimed particle size of the components used to form the shell.

The invention is particularly directed to a microcapsule containing fine particles within the capsule shell where the fine particles are used in the microencapsulation step. As disclosed on page 11 of the specification, the fine particles can be contained in the capsule shell such that the fine particles are partially exposed or entirely outside the capsule shell. In the embodiment where the particles are entirely exposed on the capsule shell, the fine particles adhere firmly to the shell surface. In other embodiments, the fine particles can be embedded entirely in the capsule shell. Toreki et al. does not disclose or suggest these features.

The microcapsules used in the electrophoretic display of the invention can be produced without using a binder resin. The fine particles in the shell of the microcapsules are organic fine particles (preferably, fine polymer particles). The organic fine particles are favorable in that the microcapsules can be made to adhere sufficiently and firmly to the base

material even when no binder resin is used. See, for example, page 26, lines 23-28 of the specification.

Usually, it is necessary to make the microcapsules adhere firmly to the electrode film to obtain an electrophoretic display having stable and excellent displaying quality. When the adhesion of the microcapsules to the electrode film is poor, there is a deterioration of the responsiveness of the electrophoretic fine particles and a deterioration of the contrast as described on page 27, lines 3-7 of the specification.

In the Examples, and particularly beginning on page 38, line 24, the firm adhesion of the microcapsules to the sheet or base material is evaluated. The image quality of the electrophoretic display is evaluated beginning on page 41, line 5, which show the improved effects of the invention.

In the case where the particle diameters are larger than 1 μm, the microcapsule shell cannot be made to contain the fine particles in an amount sufficient to enable the desired adhesion and image quality of the present invention. Thus, particles greater than 1 μm cannot attain the effects of the claimed invention. See, for example, page 10, lines 7-10, disclosing that the strength of the microcapsule cannot be enhanced where the particle diameters are larger than 1 μm.

Thus, the fine particles having particle diameters of not larger than 1 μm are used in order to adhere the microcapsules sufficiently and firmly to the base material of the electrophoretic display.

Toreki et al., does not disclose the use of the microcapsules as an electrophoretic display. Toreki et al. is directed to a process for producing hydrocapsules from a polymeric shell membrane or coating. As disclosed in column 16, lines 52-54 of Toreki et al., the solid polymer is dissolved in the monomer liquid to give a liquid solution which can be used as the

shell-forming liquid. The solid particulates are disclosed as being a suspension of the particulates in a reactive liquid matrix as the shell-forming liquid. As noted in the Action, the particles can be metals, microcapsules or microspheres, salts, polymers, ceramics or organic solids. There is no suggestion of the particle size of the fillers or the fillers being organic polymer fine particles within the particle size as presently claimed.

The Action suggests that it would have been obvious to use particles having a particle size of less than 1 μm as claimed to avoid clogging of the various components. However, Toreki et al. discloses filtering the resulting monomer liquid prior to formation of the microcapsules. The conventional spray nozzles for forming microcapsules is greater than 1 μm such that there would be no reason for Toreki et al. to limit the particle size of any of the components to 1 μm or less as presently claimed. In particular, there is no basis for the position that Toreki et al. would inherently limit the particle size of the filler to 1 μm or less as claimed.

As disclosed in Example 1 of Toreki et al., the resulting solution was filtered through a vacuum through a 300 μm nylon mesh. Thus, the particle size of the resulting solution contained particles significantly greater than 1 μm. Furthermore, the resulting solution of Toreki et al. was sprayed through a nozzle having an inner diameter of 0.020 inch, which is significantly greater than 1 μm. The remaining examples also disclose spraying the resulting solution through a nozzle having an inner diameter significantly greater than 1 μm. Accordingly, one of ordinary skill in the art would not be motivated to limit the particle size to not larger than 1 μm as presently claimed. Moreover, it would not be obvious to form a microcapsule where the shell includes organic polymer fine particles having a particle size of not more than 1 μm as claimed. Toreki et al. provides no motivation or incentive to limit the particle size of the solids or fillers in the core forming mixture. The process and apparatus

disclosed in Toreki et al. is clearly capable of producing microcapsules from a polymer mixture containing particles having a particle size significantly greater than 1 μm, and provides no motivation to use polymer particles having a particle size of not greater than 1 μm.

In view of the above comments, Toreki et al. does not disclose or suggest a microcapsule having a shell formed with polymer particles having a particle size of not greater than 1 μm. Thus, claim 1 is allowable over Toreki et al. Claim 4 depends from claim 1 to recite that the liquid substance is a dispersion containing a solvent and electrophoretic fine particles dispersed in the solvent. Toreki et al. does not disclose electrophoretic fine particles dispersed in a solvent in combination with the shell formed with organic polymer fine particles having a particle diameter of not larger than 1 μm.

In view of these amendments and the above comments, the claims are submitted to be in condition for allowance. Reconsideration and allowance are requested.

Respectfully submitted,

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